

EMILY ZENG

1B MECHATRONICS
ENGINEERING

✉ zhixuan.zeng@gmail.com

🐙 github.com/ezhxzeng

☎ (226)-792-7910

🌐 ezhxzeng.github.io/web_portfolio

Skills Summary

C++

Data science programming using
scikit learn, **numpy**, and **pandas**
libraries in **Python**

MEAN stack web development

MongoDB

ExpressJS

Angular

NodeJS

HTML, **CSS**, **Javascript**

Git

Proficient in **AutoCAD** and
Solidworks

Education

University of Waterloo,

Candidate for B.A.Sc.

Mechatronics Engineering

2016 – 2021

Relevant courses include:

Algorithms and Data Structures (MTE140)

Circuits (MTE120)

Engineering Graphics and Design (MTE100)

Digital Computation (GENE 121)

Experience

Machine Learning Driven Data Science Intern

Stackup – National University of Singapore/ISS

Jan – April 2017

- Assisted in developing a Machine Learning Driven Data Science course
- Developed an E-commerce website for use in in-course case studies (*see below*)
- Created a facial recognition program for use as a case study (*see below*)
- Modeled new office space on Google SketchUp

Robotics Team Member

FIRST Robotics – Team 4733

2014 – 2016

- Participated in a self-funded, student run team which designed and created robots from scratch in the FIRST robotics competition, programmed using C++
- Designed and prototyped mechanical arm for 2016 stronghold competition
- Brought in \$500 in sponsorships, including non-monetary resources eg. mentoring and technological resources

Associate User Experience Architect

Critical Mass

August 2015

- Analyzed and designed improvements to the user experience in customer support centers for GoDaddy, Sunglasses Hut, and AT&T
- Ideas were then incorporated into presentation to clients

Projects

Ecommerce Website 🐙

Jan – April 2017

- Developed MEAN stack website to be used as base template for machine learning models (eg. find related product, categorization, etc.)
- Heavily modified original template
 - Switched object modeling tool to mongoose in order to connect with MongoDB; increasing maintainability and simplifying code
 - Developed schemas to suit case model, such as linking to related product, thus increasing functionality
 - Modified front end to increase usability and aesthetics
- Created a Python web-crawler to get product information from commercial E-commerce website 🐙

Facial Recognition 🐙

Jan – April 2017

- Identified faces by Principle Component Analysis through using various machine learning libraries in Python such as scikit learn
- Achieved maximum precision of 85%

Sandwich Maker

Nov 2016

- LegoNXT system programmed using RobotC, with 3 sensors (colour, ultrasonic, and touch) and a dual direction locking motor system to dispense ingredients and make a sandwich

Awards

- First Place – Waterloo Engineering Competition (Junior Design) 2017
- Second Place – Engineering Graphics and Design, Tron Days (University of Waterloo) 2016
- Most Spectacular Failure – TRON days (Waterloo) 2016
- Gold medal – Calgary Youth Science Fair 2015